

## Flying High

### Activity Objectives

- To solve time, speed, distance problems
- To solve fuel consumption and fuel cost problems
- To make Wright Flyer and SR-71 (Blackbird) comparisons

### Materials

- ✓ Pencil and paper

### Instructions

Complete and answer the following problems:

- If a jet travels 300 miles per hour, how many feet per second will it travel?

Mileage Between Cities	
City	Miles
Ketchikan	Start
Juneau	224
Anchorage	505
Bethel	340
Barrow	693
Fairbanks	440

Mileage Between Cities	
City	Miles
Ketchikan	768

To use the above mileage chart, start at Ketchikan. The distance to the first stop (Juneau) is 224 miles. The distance between Juneau and Anchorage is 505 miles. The distance between Anchorage and Bethel is 340 miles and so on until you return to Ketchikan from Fairbanks.

- If you flew a route that took you from Ketchikan to Juneau, Anchorage, Bethel, Barrow, Fairbanks and back to Ketchikan, what would be the total distance traveled?
- If your jet flew at a speed of 300 miles per hour, how long would it take you to fly between each of the cities? Round your answer to the nearest tenth.
- If you allowed an additional fifteen minutes for each takeoff and fifteen minutes for each landing, how much time would be required to complete the flight plan?
- Your plane uses an average of 25 gallons of fuel per hour of flying time (including takeoffs and landings). What is the total amount of fuel in gallons that would be required to complete the trip?
- If fuel costs \$2.25 per gallon, what is the total cost of fuel?

The Wright Flyer was the first heavier-than-air powered airplane to fly successfully. It flew for 12 seconds, covering 120 feet. The Flyer was 21 feet, 1 inch long, weighed 746 pounds, and had a wingspan of 40 feet, 4 inches.

The SR-71 Blackbird was a high-altitude, high-speed military reconnaissance plane. It set a world speed record in 1976, flying 2,193.7 miles per hour at 85,000 feet. The SR-71 was 107 feet, 4 inches long, weighed 67,550 pounds (without fuel), and had a wingspan of 55 feet 6 inches. Compare the length, weight, and wing span of the two planes and answer the following questions.

- What is the difference in the wing span?
- What is the percentage of the Wright Flyer wing span to the wingspan of the SR-71?
- What is the weight difference?

- What is the percentage of the Wright Flyer length to the length of the SR-71?

If the SR-71 flew 15,000 miles in 10-1/2 hours, what would be the average airspeed (in miles per hour)?

The SR-71 surveyed 723,042.6 square miles of the United States in one hour.

- How many square miles are there in the United States?
- What percentage of the United States did the plane's flight cover in one hour?